AMENDMENTS TO THE CLAIMS

1. (Original)

Apparatus for inspecting lean of a container having a container bottom, which includes:

means for holding a container in position and rotating the container around an axis,

a light source positioned beneath the container in said means for directing light energy onto the bottom of the container,

a light sensor positioned beneath the container to receive portions of the light energy from said source reflected from the container bottom, and

an information processor coupled to said light sensor for determining, as a combined function of said reflected light energy and container rotation, departure of the container bottom from a plane perpendicular to said axis.

2. (Currently Amended)

The apparatus set forth in claim 1 wherein said light energy is directed from said source onto a periphery of the container bottom and said information processor determines departure of the periphery of the container bottom from said plane perpendicular to said axis.

3. (Currently Amended)

The apparatus set forth in claim 2 wherein the container includes knurling around the periphery of the container bottom, and said image ~~process or~~ processor is responsive to said reflected light energy to determine depth of said knurling.

4. (Original)

The apparatus set forth in claim 1 wherein said information processor includes a preprocessor for scanning said light sensor at first increments of container rotation, and a main processor for receiving scan data from said preprocessor at second increments of container rotation greater than said first increments.

5. (Original)

The apparatus set forth in claim 1 wherein said means for holding the container in position and rotating the container around an axis includes spaced backup rollers for externally engaging the container, and a drive roller for engaging and rotating the container while holding the container against said backup rollers so as to define an average axis of rotation as a function of geometry of the container and spacing between said backup rollers.

6. (Currently Amended)

The apparatus set forth in claim 1 comprising two of said light sources and two of said light sensors positioned in pairs on diametrically opposed sides of said axis, said information processor being responsive to ~~compression~~ a comparison of outputs of said light sensors to indicate lean of a container.

7-17 (Cancelled)

18. (Currently Amended)

The ~~optical inspection~~ apparatus of claim ~~7~~ 1~~, wherein said apparatus is adapted~~ for inspecting a ~~bearing~~ container bottom surface having a plurality of knurls, wherein the knurls cause said light sensor to receive non-continuous reflections from a knurl peak and a knurl valley.

19. (Cancelled)

20. (Currently Amended)

The ~~optical inspection~~ apparatus of claim ~~19~~ 18, wherein said sensor output signal at least includes first outputs representing reflections from the knurl peak and second outputs representing reflections from the knurl valley.

21. (Currently Amended)

The ~~optical inspection~~ apparatus of claim 20, wherein said ~~electronic~~ information processor is adapted to utilize said first outputs to determine container lean.

22. (Currently Amended)

The ~~optical inspection~~ apparatus of claim 20, wherein said ~~electronic~~ information processor is adapted to utilize both said first and second outputs to determine knurl depth.

23-24 (Cancelled)

25. (Currently Amended)

The ~~optical inspection~~ apparatus of claim ~~7~~ 1, wherein said information processor is adapted to generate a sinusoidal expression representative of ~~the~~ a height differential between two positions on the ~~bearing surface~~ container bottom.

26. (Currently Amended)

The ~~optical inspection~~ apparatus of claim 25, wherein said information processor uses a least square fitting technique to derive values for one or more variables of said sinusoidal expression.

27. (Currently Amended)

The ~~optical inspection~~ apparatus of claim 26, wherein said derived values ~~can be~~ are used to determine container lean.

28. (Currently Amended)

The ~~optical inspection~~ apparatus of claim 26, wherein said information processor ~~also~~ uses an iterative search method for determining a sine cycle for said sinusoidal expression.

29. (Currently Amended)

The ~~optical inspection~~ apparatus of claim 28, wherein said iterative search method is a golden section search.

30. (Currently Amended)

The ~~optical inspection~~ apparatus of claim 26, wherein said information processor ~~also~~ uses a selection process involving Min/Max data points to improve the efficiency of the least square fitting technique.

31-32 (Cancelled)

33. (Currently Amended)

A method of inspecting a container bearing surface, comprising the steps of:

(a) providing a light source generally facing the bearing surface,

(b) providing a light sensor generally facing the bearing surface,

(c) rotating the container about an axis,

(d) causing said light source to emit light which reflects off of a position on the bearing surface,

(e) causing said light sensor to record the position at which the ~~reflected~~ light reflected in said step (d) strikes said light sensor, and

(f) analyzing ~~the bearing surface~~ from said position data recorded in said step (e) departure of the bearing surface from a plane perpendicular to said axis.

34. (Cancelled)

35. (Original)

The method of claim 33, wherein the bearing surface being inspected is a knurled surface.

36. (Original)

The method of claim 33, wherein step (e) further includes compressing data from said recorded position data.

37. (Original)

1 The method of claim 33, wherein step (f) further includes utilizing a sinusoidal
2 expression to model the bearing surface of the container.

38. (Original)

1 The method of claim 37, wherein one or more variables of said sinusoidal
2 expression are solved using a least square fitting technique.

39-40 (Cancelled)